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A 21 000-year record of fluorescent organic matter markers in the WAIS Divide ice core

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Supplement

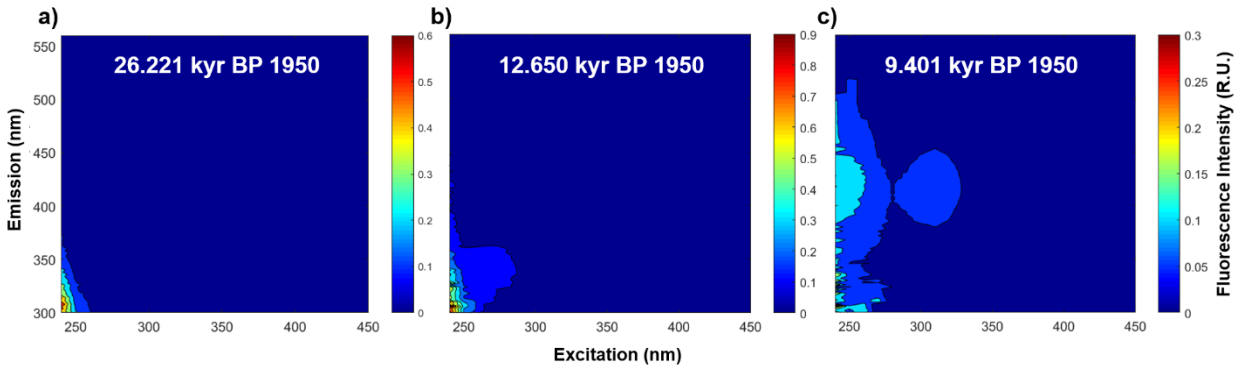

Figure 1: Examples of West Antarctic Ice Sheet Divide ice core Excitation Emission Matrices (EEMs) showing low excitation/emission wavelength organic matter (OM) fluorescence from a) the Last Glacial Maximum ice (26.221 kyr BP; before present 1950) and b) the deglaciation ice (12.650 kyr BP 1950), and c) both lower and higher excitation/emission wavelength fluorescent OM from the Holocene (9.401 kyr BP 1950; dating scale WDC06A-7) (WAIS Divide Project Members, 2013)). Fluorescence intensities are reported on the z axis in Raman Units (R.U.). Note: All examples were post-processed for septa-lid blank subtraction, and Raman and Rayleigh-Tyndall scattering effects.

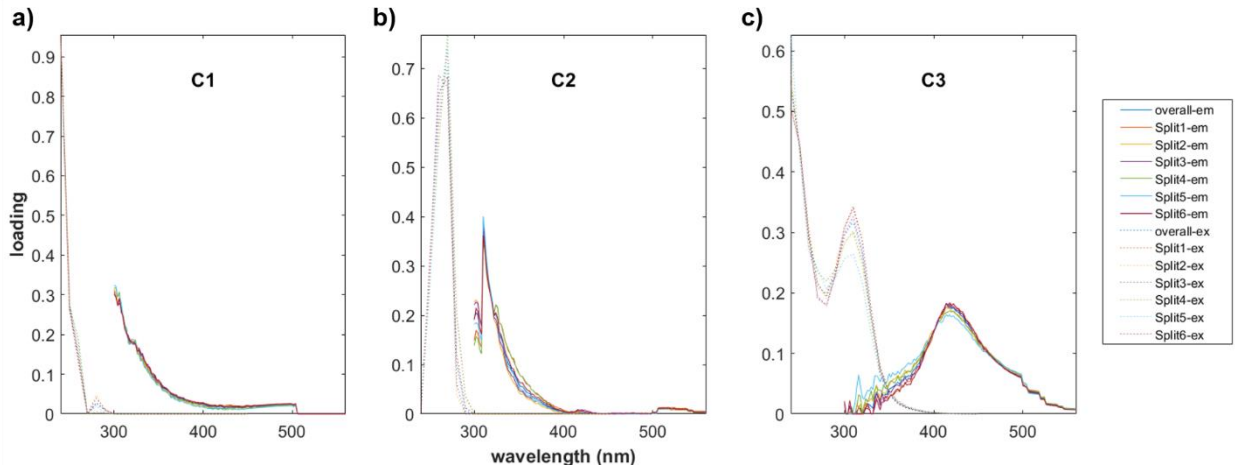

Figure 2: PARAFAC loading scores for excitation (ex) and emission (em) wavelength fluorescence for the three component model of the 21.0 kry record of West Antarctic Ice Sheet Divide organic matter. Results of the PARAFAC model are displayed as a function of the individual fluorescing components, a) component one (C1), b) component two (C2), and c) component three (C3), for the six split half categories annotated in the legend.

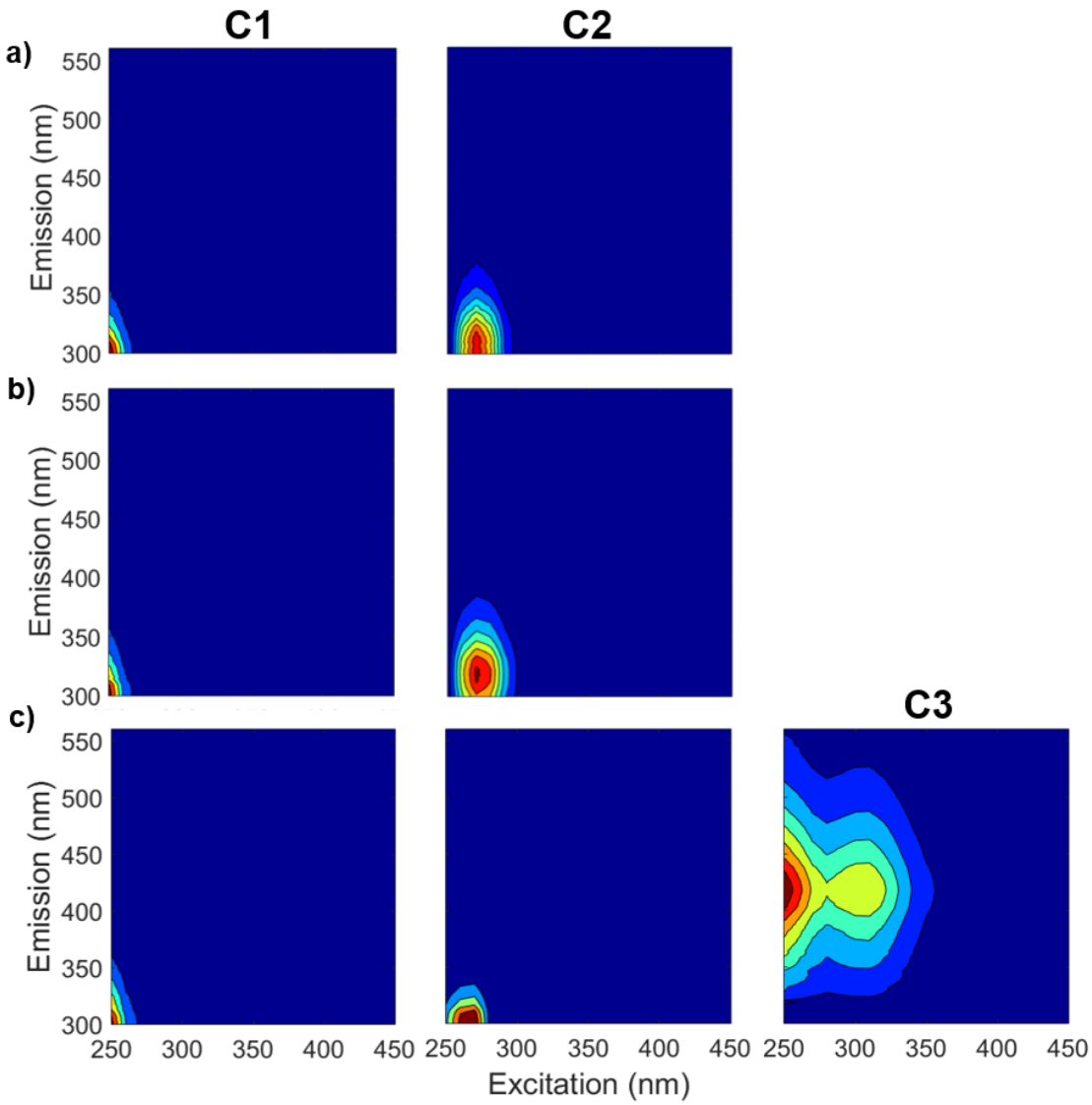

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Figure 3.Three climate categorized supplementary PARAFAC models of the West Antarctic Ice Sheet Divide ice core fluorescent organic matter showing components identified for a) the Last Glacial Maximum (27.0-18.0 kyrs BP 1950), b) last deglaciation (18.0-11.5 kyrs BP 1950), and c) the Holocene (11.5-6.0 kyrs bP 1950; dating scale WDC06A-7) (WAIS Divide Project Members, 2013).

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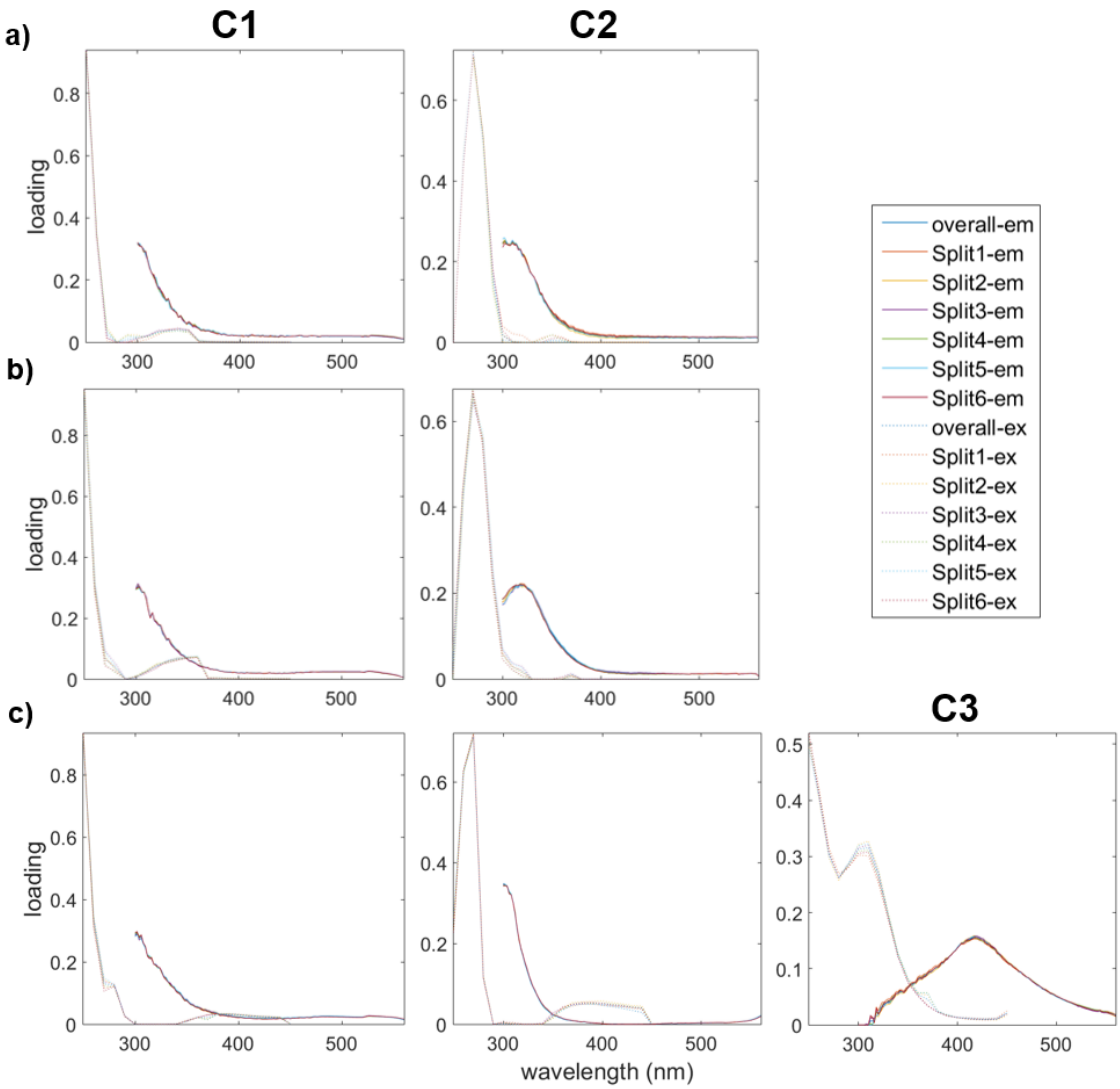

Figure 4: PARAFAC loading scores for excitation (ex) and emission (em) wavelength fluorescence for the three supplementary climate models of the West Antarctic Ice Sheet Divide organic matter. Results of the PARAFAC models, for the six split half categories annotated in the legend, are displayed as a function of the fluorescing components one, two, and three (C1, C2, and C3) for a) the Last Glacial Maximum (27.0-18.0 kyrs BP 1950), b) last deglaciation (18.0-11.5 kyrs BP 1950), and c) the Holocene (11.5-6.0 kyrs bP 1950; dating scale WDC06A-7) (WAIS Divide Project Members, 2013).

References

WAIS Divide Project Members: Onset of deglacial warming in West Antarctica driven by local orbital forcing, Nature, 500, 440-444, 10.1038/nature12376doi, 2013.